

WIDENING JOINTS

Once regarded as the only way of obtaining wide panels made from solid timber. These wide panels were required for carcase construction, counter and bench tops also door and wall panelling.



Modern "flat panel products" have reduced the need for widening joints. However some areas in the industry are having a revival of "colonial" designed fitments requiring solid timber panel components. E.g. kitchen cupboards and counter units etc.

Definition. Widening joints are used to join two or more boards together to gain greater widths of material.

Panel Joints:

Most solid timber panels require the edge clamping of boards together to achieve a wide panel.

Always [wear the appropriate PPE](#) when selecting and machining timber

When selecting timber for panels, be sure to:

- a. Select timber that is straight and free of defects
- b. For the best results use timber that is [quarter sawn](#)

Machining the material:

Dress a face side first and then dress the face edge. ([see jointer notes](#))

Apply the correct marks for establishing face sides and edges.

The selection of the type of joint to use will be dependant upon the machinery you have available, the clamping systems that are available and the ability to finish the panels

Types

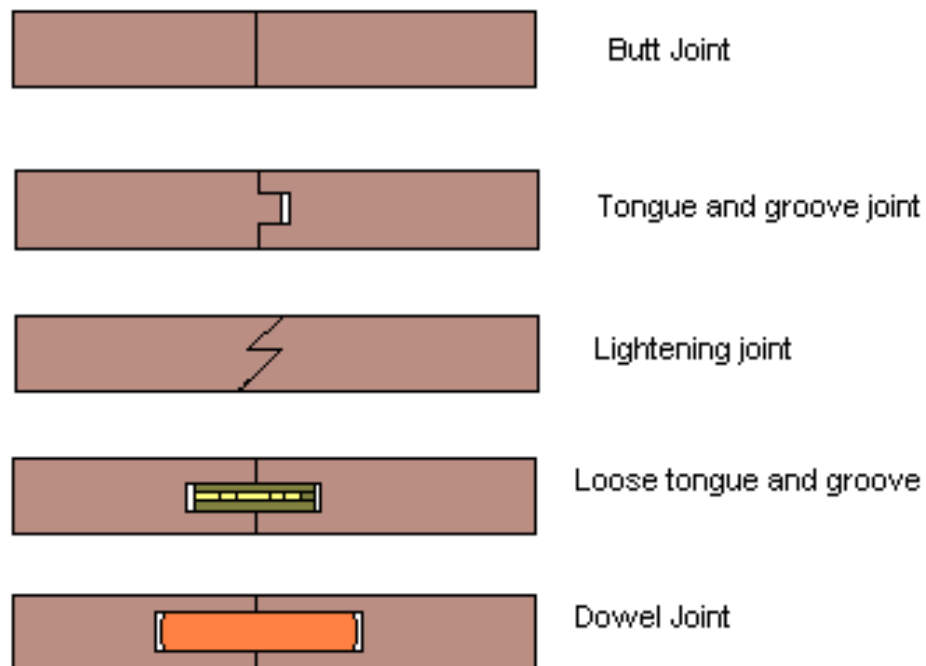
1. **Butt Joint** - Boards joined using this joint must have edges planed (shot) straight and square then glued and cramped.

2. **Tongue and Groove Joint** - (matched joint) A groove is run on one piece and a matched groove is run on the other. This joint must be glued and cramped.

3. **Machine Joint** – an angled profile is run on each edge of the boards. Being angle the, under pressure the joints closes upon itself.


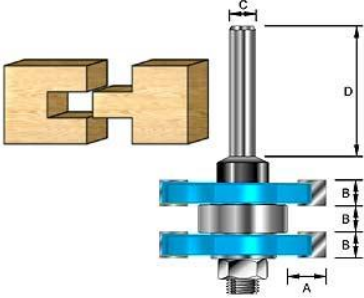


4. **Loose Tongue and Groove** - Prepared as for a butt joint then a groove is run in both edges to be joined. A loose tongue is inserted (plywood) into the joint which is glued and cramped.11

5. **Dowel Joint** - Prepared as for butt joint. Dowels are inserted at regular intervals along the joint. The boards are glued and cramped. Careful selection of dowel length and diameter is important.



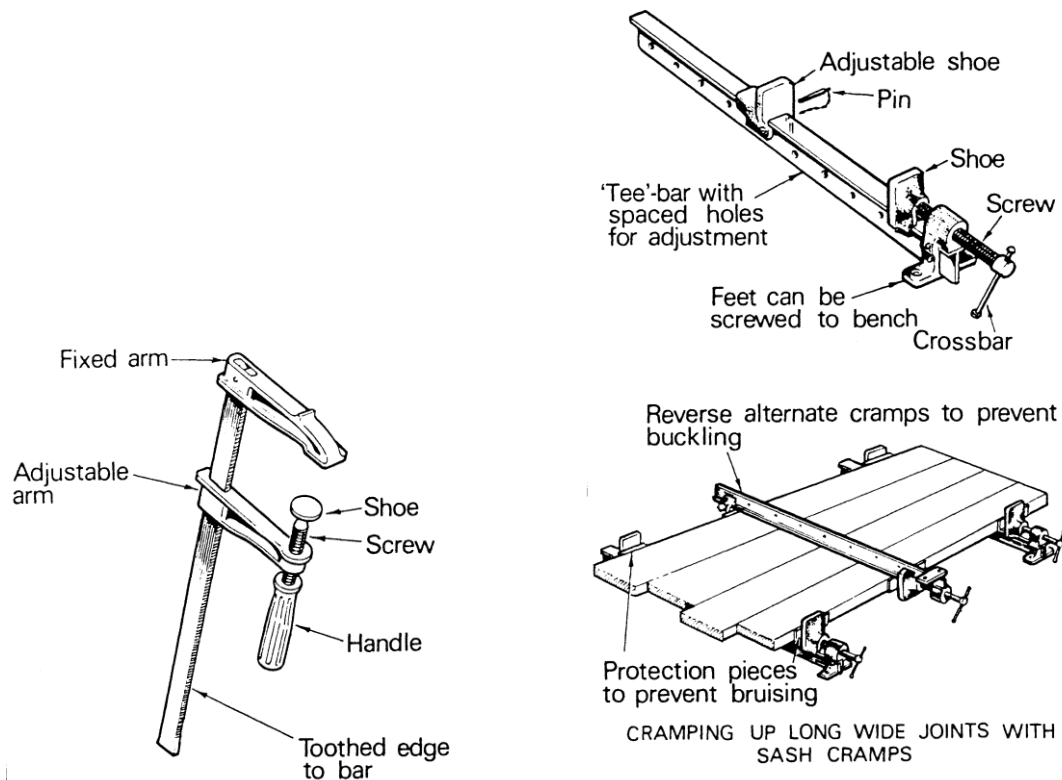
Machines available for use:

<i>Machine</i>	<i>Use</i>
Jointer	<p>Dressing face sides and edges</p> 

Thicknesser	<p>Machining timber to width and thickness</p> 
Square dresser(header)	<p>Machines all four sides in one operation</p> 
Spindle moulder	<p>For machining edge joints</p> 
Wide belt sander	<p>for flushing and finishing panels after assembly</p> 

Clamping Systems:

For small runs you may choose to use sash, bar or pipe clamps to bring the joints together. Remember to use clamping blocks and have a wet rag handy to remove excess adhesive.



Applying adhesives

Once components are measured, prepared and located for assembly, you will need to secure them. Adhesives are applied to the joints of some components before they are held in place. The drawings or specifications will show if adhesives are to be applied before the components are braced together.

Note

Before assembling your joint, prepare all the necessary equipment such as:

sash clamp

clamping block

damp sponge

paper

adhesive.

By doing this first, you will have everything you need and can concentrate on the assembly process. You will also avoid adhesives drying too quickly.

Checking the joints and assembly

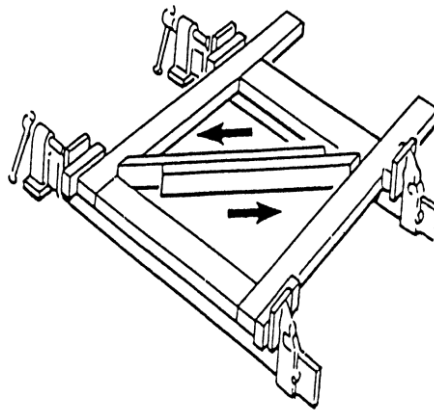
Before the components are permanently fixed in position you will need to check that the:

- joints are closed within the specified tolerances
- assembly is square
- assembly is in wind.

Check the assembly for the following.

Squareness

This is achieved by measuring diagonally with a rule, tape or pinch rod from an inside corner to the opposite inside corner. If this diagonal measurement is the same as the opposite diagonal then the assembly is square.

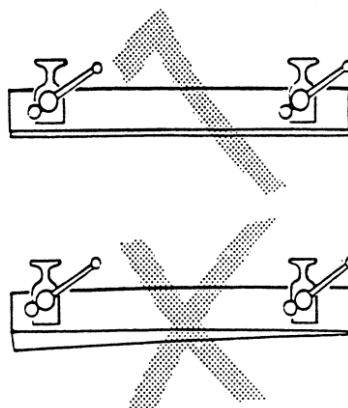


Parallel

The assembly is the same distance apart at opposing ends or sides. This is generally applied to leg and rail assemblies.

Twist

This condition can be checked by sighting common and/or opposite components to determine if these parts are on the same plane of reference. You should endeavour to start working off a level and an uncluttered surface.



Straight

This condition fails to occur when inappropriate cramping blocks are used or by distortion of components through over tightening of sash clamps. Sometimes problems can also occur when a damaged sash cramp is used. Use a rule or straight edge to check the assembly for straight.